

DOCUMENT-IDENTIFIER: US 20020182880 A1

TITLE: Method of plasma etching silicon nitride

----- KWIC -----

[0003] U.S. Pat. No. 6,153,514 discloses a method of forming a self-aligned dual damascene structure which includes a lower conductive layer (e.g., copper or copper alloy), a first etch stop layer (e.g., silicon nitride), a first dielectric layer (e.g., low k dielectric material wherein $k \leq 4$), a second etch stop layer (e.g., silicon nitride), a second dielectric layer (e.g., low k dielectric material), a hard mask layer (e.g., silicon nitride), and a photoresist layer patterned to provide the feature to be etched into the second dielectric layer. According to this patent, the nitride hard mask layer is etched with CHF_3/N_2 , the second dielectric layer is etched with $\text{N}_2/\text{H}_2\text{O}$ or N_2/H_2 , the second etch stop layer is etched with CHF_3/N_2 and the first dielectric layer is etched with $\text{C}_4\text{F}_8/\text{Ar}/\text{O}_2/\text{CO}$. U.S. Pat. No. 5,611,888 discloses a method of plasma etching silicon nitride using a mixture of 10-20 sccm Freon 23 (CHF_3) and 70-110 sccm O_2 .